# Chapter 2.2 Earned Value Management System

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### 1. This chapter is about:

- A. This chapter provides policy for system surveillance and program analysis of a supplier's Earned Value Management System (EVMS).
- B. The output of these processes include:
  - 1) EVMS Acceptance
  - 2) EVMS Surveillance to ensure compliance with EVMS Guidelines, the contract, and customer requirements
  - 3) Predictive and timely EVMS data analysis
  - 4) Communication of system and program status to the customer

#### 2. We do this because:

- A. DCMA is the <u>DoD Executive Agent</u> for EVMS. As the Executive Agent, DCMA is responsible for ensuring the effective implementation and coordination of Earned Value within DoD. We are responsible for ensuring the integrity and effectiveness in application of processes related to Earned Value. We maintain information related to supplier system acceptance and review schedules (including Integrated Baseline Reviews (IBRs)) and provide for the conduct of EVMS reviews. We maintain liaison functions with Industry.
- B. An EVMS is used to provide cost, schedule, and technical performance management information. It is the supplier's responsibility to develop, implement, maintain, and use an EVMS that complies with Industry Guidelines (ANSI EIA 748-98) and meet contractual requirements. It is DCMA's responsibility to provide system surveillance and program analysis to EVMS customers. Customers include the Contract Management Office (CMO), Defense Contract Audit Agency (DCAA), and the Program Management Office (PMO).
- C. EVMS information must be predictive and include impacts on cost, schedule, and technical performance. Continuous risk assessment and risk mitigation efforts by the Program Integrator (PI), the Program Support Team (PST) and EVMS Monitor are essential to ensure compliance. Top level metrics for this process are <u>RIGHT PRICE</u>, <u>RIGHT TIME</u>, and <u>RIGHT ITEM</u>. The EVMS provides feeder metrics to provide insight to customers of EVMS business practices.

#### 3. DCMA policy:

- A. The CMO PI (supported by the PST) and EVMS Monitor must perform surveillance of EVMS processes, and request corrective action. This maximizes the scope of surveillance and the sharing of information within the CMO.
- B. The CMO Commander must evaluate the effectiveness and implementation of surveillance within their organization using the <a href="DCMA EVMS Maturity Model">DCMA EVMS Maturity Model</a>. This model is used by the CMO to determine the overall maturity of their organization and as a road map for improvement.
- C. The District Process Champion must provide feedback to the DCMA EVMS Process Owner on policy effectiveness related to supplier systems with EVMS guidelines. They must assess policy execution at CMOs. They must facilitate technical training identified by the CMO for its assigned EVM personnel.
- D. The EVMS Center assesses EVMS policy, guidance, and practices to ensure effective implementation across DoD. This includes providing assistance to CMOs in the performance of specialized activities such as reviews for cause and assistance with system changes. In addition, the EVMS Center must advise the DCMA EVMS Process Owner on the effectiveness of, and recommend changes to, resources, tools, guidance, and current job competency standards.

# 4. The process and who is responsible:

- A. Process inputs:
  - 1) Contract, or pre-award document, received with EVMS requirements
  - 2) Past Performance Data
  - 3) Statement of Work
  - 4) Contract Work Breakdown Structure (CWBS)
  - 5) Contract Data Requirements List (CDRL)
  - 6) EVMS description, processes, and internal surveillance plans
  - 7) Cost Performance Report (CPR)
  - 8) Cost/Schedule Status Report (C/SSR)
  - 9) Contract Fund Status Report (CFSR)
  - 10) Management Reserve, Undistributed Budget, and Baseline Change Logs, and variance analysis reports.
- B. Sub-processes:
  - 1) Appoint EVMS Monitor
  - 2) Appoint PI and PST
  - 3) Early CAS Source Selection Board/Inquiry
  - 4) Contract receipt, review, and post-award
  - 5) Recognition and acceptance of EVMS
  - 6) Initiation of Advance Agreement (AA)
  - 7) Prepare input to delegations
  - 8) Risk handling plan development and execution
  - 9) Risk monitoring through system status and program analysis reporting
  - 10) Adjust surveillance based on risk
- C. Process mechanisms:
  - 1) Delegations
  - 2) Memorandums of Agreement (MOAs)
  - 3) DoD Data Item Descriptions for <u>CWBS</u> (DI-MGMT-81334), <u>CPRs</u> (DI-MGNT-81466), C/SSRs (DI-MGMT-81467), and CFSR (DI-MGMT-81468)
  - 4) DD Form 1921 series, Supplier Cost Data Reporting (CCDR)
  - 5) EVMS Risk Handling Plan
  - 6) DD Form 1716, Contract Data Package Recommendation/Deficiency Report
- D. Process controls:
  - 1) FAR 42.302(a)(15)(40)(41) and (67), Contract Administration Functions
  - 2) <u>DoDD 5000.1</u>, Defense Acquisition
  - 3) <u>DoD 5000.2-R</u>, Mandatory Procedures For Major Defense Acquisition Programs and Major Automated Information Systems Acquisition Programs
  - 4) DFARS 242.1107-70, Additional Clauses
  - 5) DFARS 252.234-7000, Solicitation Provisions, Notice of EVMS
  - 6) DFARS 252.234-7001, EVMS
  - 7) DFARS 252.242-7005, C/SSR
  - 8) DFARS 252.242-7006, C/SSR Plans
  - 9) NASA EVMS Policy and Clauses
  - 10) DLAH 8400.2, Earned Value Management Implementation Guide
  - 11) DLAI 5000.7, C/SSR Joint Guide
- E. Process flow chart
- F. Who does what and when they do it:
  - 1) Risk Planning:
    - a) The CMO must review the contract, along with modifications and customer guidance (i.e., MOAs and/or delegations), to get a clear understanding of the requirements. However, MOAs and delegations only serve to document tailored requirements that are not found in this chapter. The requirements of this chapter take precedence. The Earned Value Management Implementation Guide (EVMIG) and the EVMS Guidebook provide additional guidance regarding performance of risk-based program and system surveillance. Key processes must be identified along with supporting rationale. Key processes are those

- which, if not properly controlled, can adversely affect cost, schedule, and/or technical performance. Key processes related to EVMS include organizing, scheduling, work/budget authorization, accounting, indirect management, management analysis, change incorporation, material management, and subcontract management.
- b) The CMO should pursue opportunities for participation in <u>Early CAS</u>. The CMO shall provide the source selection board information on acceptability of EVMS, review contractual requirements, and give pertinent past performance information. System acceptability determinations may be made during this phase.
- c) The CMO must recommend changes to the contract if there are inappropriate EVMS implementation and/or reporting requirements. Any recommendations or deficiencies requiring a contract modification must be reported by the ACO to the Procuring Contracting Officer (PCO). Recommended changes must be documented on DD Form 1716, Contract Data Package Recommendation and Deficiency Report.
- d) For contracts that fall below acquisition thresholds for full EVMS, DoD has recognized a need for effective performance measurement using the C/SSR requirement (or CPR, No Criteria). In short, C/SSR retains the benefits of earned value while avoiding the increased costs and reporting requirements of EVMS. The C/SSR is intended to be a performance report with no contractual requirement for a management control system that meets Industry Guidelines. While there is no need for comprehensive system surveillance, the PST must still verify data integrity by performing program surveillance and analysis as dictated by risk.

#### 2) Risk Assessment

- a) Assessment of system risk is an important element in determining the level of system surveillance activity. Higher risk equates to more frequent activity. This could require review of identified problem process areas, those specifically identified in the delegation, or as otherwise requested by the PMO. More details for Risk Assessment are contained in the <u>Supplier Risk Management</u> Chapter and the <u>EVMS Risk Matrix</u>. System or key process risk ratings must be supported by data (i.e., product audits, process proofing, system evaluations, and government and supplier performance data). Each system or key process must be classified in one of the following risk ratings:
  - (1) High Risk: This risk rating would be appropriate where:
    - (a) The process is out of control or performance data casts significant doubt on the capability of the system or key process to meet requirements, or
    - (b) A major disruption is highly probable and the likelihood is the supplier will not meet the performance, schedule, or cost objectives.
  - (2) Moderate Risk: This risk rating would be appropriate where:
    - (a) There is moderate process variance and the trend is adverse.
       Performance data casts doubt on the ability of the system or key process to consistently meet requirements, or
    - (b) Not only is it probable the supplier will encounter delays in meeting the performance, schedule, or cost objectives, but if concerns are not addressed, the process may progress to high risk.
  - (3) Low Risk: This risk rating would be appropriate where:
    - (a) Performance data provides confidence in the capability of the system or key process to meet requirements, or
    - (b) Minimal or no impact will occur in meeting performance, schedule, or cost objectives.
- b) The PI is responsible for continually assessing and reporting program risk based on data emanating from the EVMS. The PST supports this responsibility by providing information relative to program risk. When classifying risk, performance history, process effectiveness, efficiency, and sophistication for each key process must be considered. An EVMS risk rating must be assigned

by the PI (with supporting rationale) and delegate tasks to the PST, as appropriate. A risk rating may direct the PST to establish delegations with CMOs having oversight responsibility of sub-tier suppliers. Specific responsibilities must be documented in the MOA or delegation. Surveillance must ensure that the supplier's EVMS:

- (1) Provides timely and reliable cost, schedule, and technical performance measurement information summarized directly from the supplier's internal management system
- (2) Provides timely indications of actual or potential problems
- (3) Maintains baseline integrity
- (4) Provides information that depicts actual conditions and trends
- (5) Provides comprehensive variance analysis at the appropriate levels including proposed corrective action in regard to cost, schedule, technical, and other problem areas
- c) The EVMS Monitor has the primary responsibility for surveillance of the supplier's EVMS to ensure compliance with the guidelines. There are a number of organizations that require feedback relative to a supplier's EVMS. These include the CMO, DCAA Field Activity, the PMO, and the integrated component activities (e.g., Service EVMS Focal Point). The supplier may choose to participate in this surveillance process and is strongly encouraged to do so. EVMS surveillance begins prior to contract award, continues through system compliance evaluation and acceptance (when required), and extends throughout the duration of the contract.
- d) If system discipline problems occur for which the supplier fails to correct, the EVMS Monitor must follow the procedures for corrective action (<u>PROCAS</u>). The EVMS Monitor may ultimately recommend EVMS Acceptance withdrawal to the ACO. The EVMS Monitor must report all discipline problems determined to be systemic to the PST, ACO, District EVMS Process Champion, PMO, and to other affected CMOs. Through the Management Council, the CMO Commander must solicit feedback from industry and government counterparts on suggested improvements.
- e) A low risk EVMS may not necessarily mean that a given program utilizing that EVMS is low risk as well. Therefore, the PST must perform a program risk assessment by analyzing cost, schedule, and technical performance. Program risk assessment may extend to the sub-tier level and may necessitate the issuance of a delegation to the cognizant CMO.

# 3) Risk Handling

- a) The Risk Handling Plan must include the intensity, schedule, and frequency of the risk handling methods chosen. The risk handling methods, and their intensity, schedule, and frequency, will depend on the assigned risk.
  - (1) High Risk requires immediate and intensive EVMS surveillance, process evaluations, control account manager interviews, audits, process proofing, data reviews, data analysis and sampling, until the risk is mitigated to an acceptable level.
  - (2) Moderate Risk may include the establishment of scheduled EVMS surveillance, process evaluations, audits, analysis, and sampling, until risk of impact to the program/contract is reduced.
  - (3) Low Risk allows periodic reviews of supplier data to ensure process variance doesn't increase and the process capability remains stable.
- b) The PI is responsible for communications with the PMO. The EVMS Monitor must provide information to the PI so that PMO can be apprised of whether or not the EVMS complies with the guidelines. System integrity is ensured through onsite surveillance and based on the objective data. Sample verifications of key system elements, such as evaluations, audits, process proofing, data reviews, and data analysis are used to validate the credibility of data. A risk-handling plan must includes roles and responsibilities of CMO personnel and integrate all

- appropriate DCMA surveillance activities. At a minimum, the risk-handling plan must incorporate the EVMIG, EVMS guidelines, and DoD 5000.2-R requirements. This plan must be coordinated with all customers to ensure that EVMS surveillance is performed in an effective manner and avoids duplication. Customers may be invited to participate in reviews of the EVMS. The risk-handling plan must include a schedule that includes intensity, frequency, and methods that ensure implementation and compliance to the EVMS guidelines and contract requirements and must be incorporated into the overall PI plan.
- c) The PI is responsible for directing the PST to oversee the supplier's application of the EVMS on a given program. This includes predictive analysis, program trends, independent Estimates at Completion (EAC), cost and schedule variances, assessment of earned value methods, participation in IBRs, and resolution of PMO concerns. The PST must ensure integrated, cross-functional surveillance of efforts to manage cost, schedule, and technical performance. This analysis must evaluate whether the variance analyses are accurate, timely, and whether proposed corrective actions are feasible, reasonable, and within the scope of the contract. Analysis may extend below contractual reporting levels to identify root causes. The PST must document their results on a monthly basis. If there are EAC differences between the CMO and the supplier greater than five percent, it must be explained, documented, and reported to the PMO.
- d) The EVMS risk-handling plan must be reviewed and/or updated at least annually. The PST must continually review surveillance activities to ensure that the level and degree of CMO surveillance is appropriate. In addition, adjustments must address the supplier's internal EVMS surveillance practices and willingness to participate in joint surveillance. The PST must verify that supplier's management personnel are using the EVMS to identify problems, develop solutions and implement corrective action.
- e) HQ DCMA will be responsible for accomplishment of EVMS acceptance and reviews for cause. The CMO must initiate this process through the District EVMS Process Champion. Details of this process are contained in the <a href="DCMA EVMS">DCMA EVMS</a>
  <a href="Acceptance and Review Procedures">Acceptance and Review Procedures</a>. In addition, procedural aspects for Government personnel related to specifying and using EVMS and for evaluating those systems are contained in the EVMIG.

# 4) Risk Monitoring

- a) System surveillance must include an evaluation of supplier management control to ensure that data provided to customers is timely, valid, and is used to manage.
   System surveillance must consider risk and is based upon compliance with the Industry guidelines.
- b) The PST is responsible for EVMS application on a given contract. EVMS metrics must be integrated into the risk-handling plan. Metrics must be analyzed to update or modify the program risk assessment on a monthly basis. The PST risk handling plans must address key performance risk elements and satisfy the terms and conditions of the MOA or delegation. The PST may consider using a variety of metrics to monitor risk. However, metric selection must include the following:
  - (1) Cost Variance
  - (2) Schedule Variance
  - (3) Schedule Performance Index (SPI)
  - (4) Cost Performance Index (CPI)
  - (5) To Complete Price Index (TCPI)
  - (6) Estimate at Completion (EAC)
  - (7) Baseline changes

# 5) Risk Documentation

 a) Risk management files must be established by the CMO to contain all pertinent data and information to include both system and program surveillance efforts.
 These files must include system and program review results, evaluations,

- discrepancies, and follow-up actions. These files must include any customer correspondence, meeting minutes, and actions. The program file must be maintained until program completion and forwarded for inclusion in the official contract file. The system file must be maintained indefinitely.
- b) The cognizant ACO is the authority for recognizing the supplier's system as being compliant with the EVMS guidelines. This is done by issuance of a letter of acceptance or AA indicating system acceptability. A letter of acceptance is prepared when a supplier is unwilling to sign an AA. The AA demonstrates that the supplier is committed to using EVMS as part of their integrated management and documents that it will use EVMS on all current and future contracts. The AA will remain in effect indefinitely unless surveillance deems the system to be noncompliant. The EVMS Monitor must review proposed changes to the EVMS (e.g., system description, policies, and/or procedures) to ensure compliance with the guidelines and, in turn, make recommendations to the ACO. Changes to the system require prior Government approval unless a Pre-Approval Waiver has been issued by the ACO. The EVMS Monitor must coordinate with all customers prior to recommending the ACO grant the Pre-Approval Waiver.
- c) The DCMA software tool for assessment is <a href="www.wlinings.com">wlnsight</a>, which is used to identify program risk. In a memorandum dated 25 January 1995, the Under Secretary of Defense for Acquisition and Technology directed that all services begin implementing Electronic Data Interchange (EDI) for program cost and schedule performance reporting, including the ANSI X12 transaction sets 839 Project Cost Reporting and 806 Project Schedule Reporting. If not already a contractual requirement, the CMO must request (DD 1716) that electronic EVMS data (e.g., CPR) be made available. In either event (electronic or otherwise), EVMS data must be entered into wlnsight for analysis. Within 30 days of the CDRL requirement, wlnsight data files must be submitted to the District Process Champion for consolidation and input into the DCMA EVMS corporate database. This database interacts with the DCMA Information Repository and Automated Metrics System (DIRAMS). This requirement applies to all contracts (both Prime and Support) for which there is an EVMS requirement (CPR and C/SSR) and/or delegation/MOA.
- d) The CMO must record EVMS Acceptance Status in the Supplier Information Service Supplier Systems Status Table (CSST). The CMO must ensure the information is complete, accurate, and updated annually or when system status changes, whichever is earlier.

## 5. Training:

A. PST members and EVMS Monitors must have a Level II DAWIA Certification. Specific knowledge, skills, and abilities required for EVMS surveillance are detailed in the <u>EVMS</u> <u>Training Matrix</u>.

# 6. PLAS reporting code:

- A. 070, EVMS
- B. Process Unit Count: CSST Review Entries

# 7. DCMA Process Owner and Process Champions:

- A. DCMA Process Champion: Mr. William Gibson, (703) 767-3368, email: wgibson@dcmchq.dla.mil
- B. DCMDE Process Champion: Mr. Ramlala Sinha, (617) 753-3596, email: rsinha@dcmde.dla.mil
- C. DCMDW Process Champion: Ms. Barbara Gomes, (310) 900-6558, email: bgomes@dcmdw.dla.mil
- D. DCMDI Process Champion: Mr. Robert Posthumus, (703) 767-2793, email: rposthumus@dcmchq.dla.mil